

TRANSPORTATION

Findings/Current Conditions

The current trend sees an increasing number of motor vehicles using the primary and secondary roads on Johns Island. This effect is due to construction of new neighborhoods and other uses on the island and on Kiawah and Seabrook islands. The limited amount of interconnectivity forces this added traffic load onto the existing arterial roads, which increase traffic congestion and create longer travel times within and across the Island. It is expected that this trend will continue for an extended period of time. The increased load on thoroughfares is causing traffic congestion along the roads and at intersections, particularly at the intersections of Maybank Highway and River Roads and Maybank, Main and Bohicket Roads.

Conventional responses to this type of traffic congestion involve road widening and intersection enlargements. Because of the extraordinary canopy created by stands of trees along extensive portions of these main roads, the prospect of road widening is not acceptable (see photos below). The results of a survey of the existing road canopy condition show the extent and nature of this highly desirable condition and are included here in this report (Illustration 18).

It is recognized and emphasized that a limit to development on Johns Island exists in the form of an Urban Growth Boundary (Illustration 3, Page 2). Enforcement of this boundary will ultimately limit the amount of development and population on the island, and therefore will limit traffic generated by residents and visitors to the island.

Considering the implications of global climate change and shifts in the use and availability of conventional fuels and energy sources, it is imperative to emphasize alternative forms of transportation on Johns Island. Walking, cycling and the use of mopeds, along with public transit modes, will become more prevalent in the near future. In light of these anticipated changes, it is sensible to plan now for connectedness of both conventional streets and roads while providing pedestrian and bicycle pathways. Currently, a deficiency exists in terms of multi-modal options on Johns Island.

I-526 (Mark Clark Expressway) Extension to and Across Northeast Corner of Johns Island

The potential extension of I-526 to Johns Island was easily the most divisive issue discussed during the Community Planning Workshop in March of 2007. The City of Charleston's Master Road Plan already includes this roadway segment so it was not the role of this workshop or planning effort to determine the final status of this project. There are other past and future transportation related studies that have looked or will continue to look at the extension of I-526.

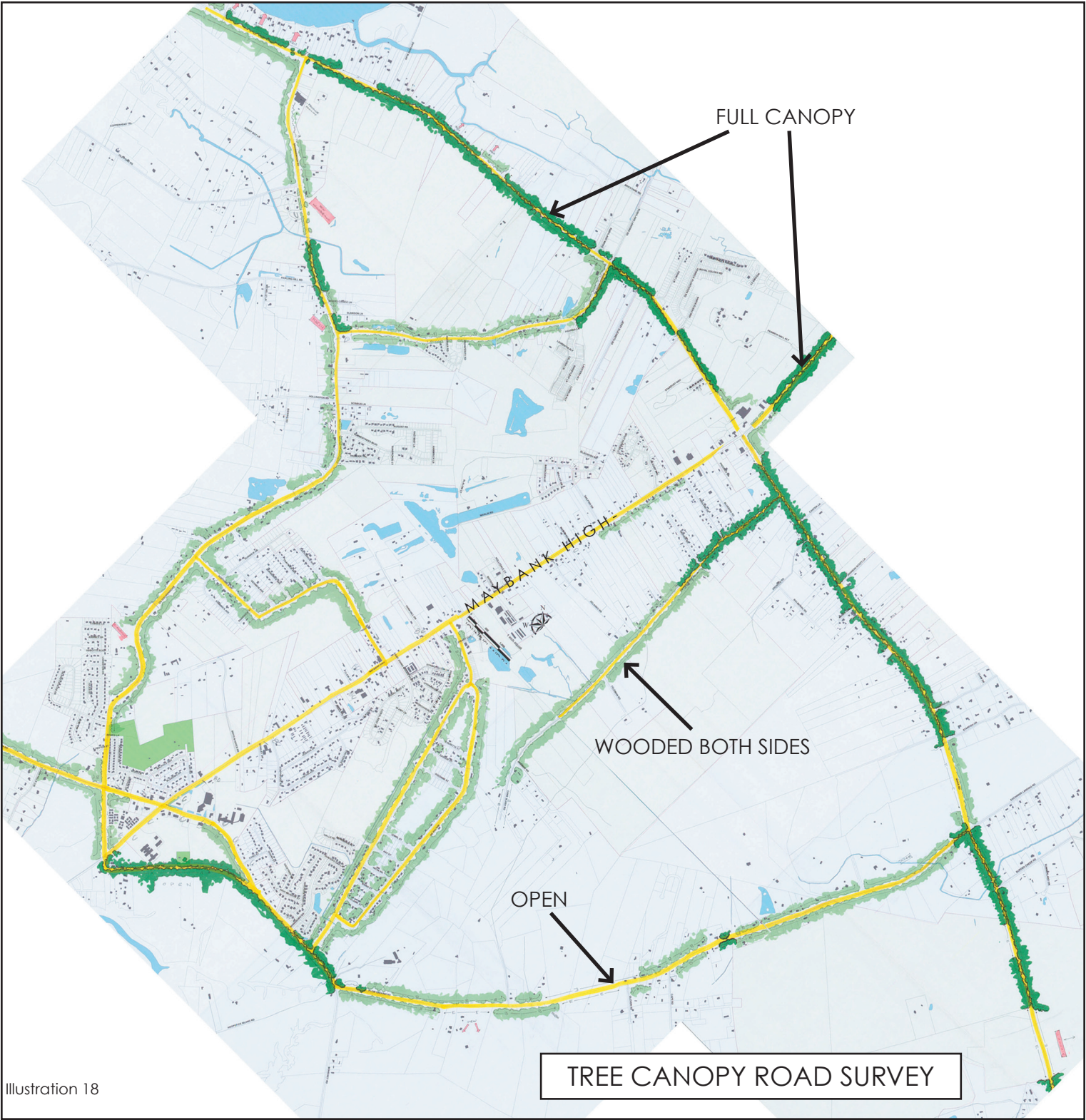
The project team, however, was in full agreement that new development is inevitable to Johns Island in the future whether or not I-526 is extended. In fact, all the major projects within the UGB are currently being developed and approved, with no consideration of the timetable for the I-526 completion.



Not appropriate on Johns Island
Standard 5-Lane arterial with a center turn lane



Appropriate on Johns Island
Typical tree lined and canopied Johns Island Road



JOHNS ISLAND COMMUNITY PLANNING WORKSHOP

The City of Charleston, Department of Planning, Preservation & Economic Innovation

Conducted: March 5th through 10th, 2007 Charleston, South Carolina

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MAYBANK HIGHWAY FOUR AREAS OF CONSIDERATION

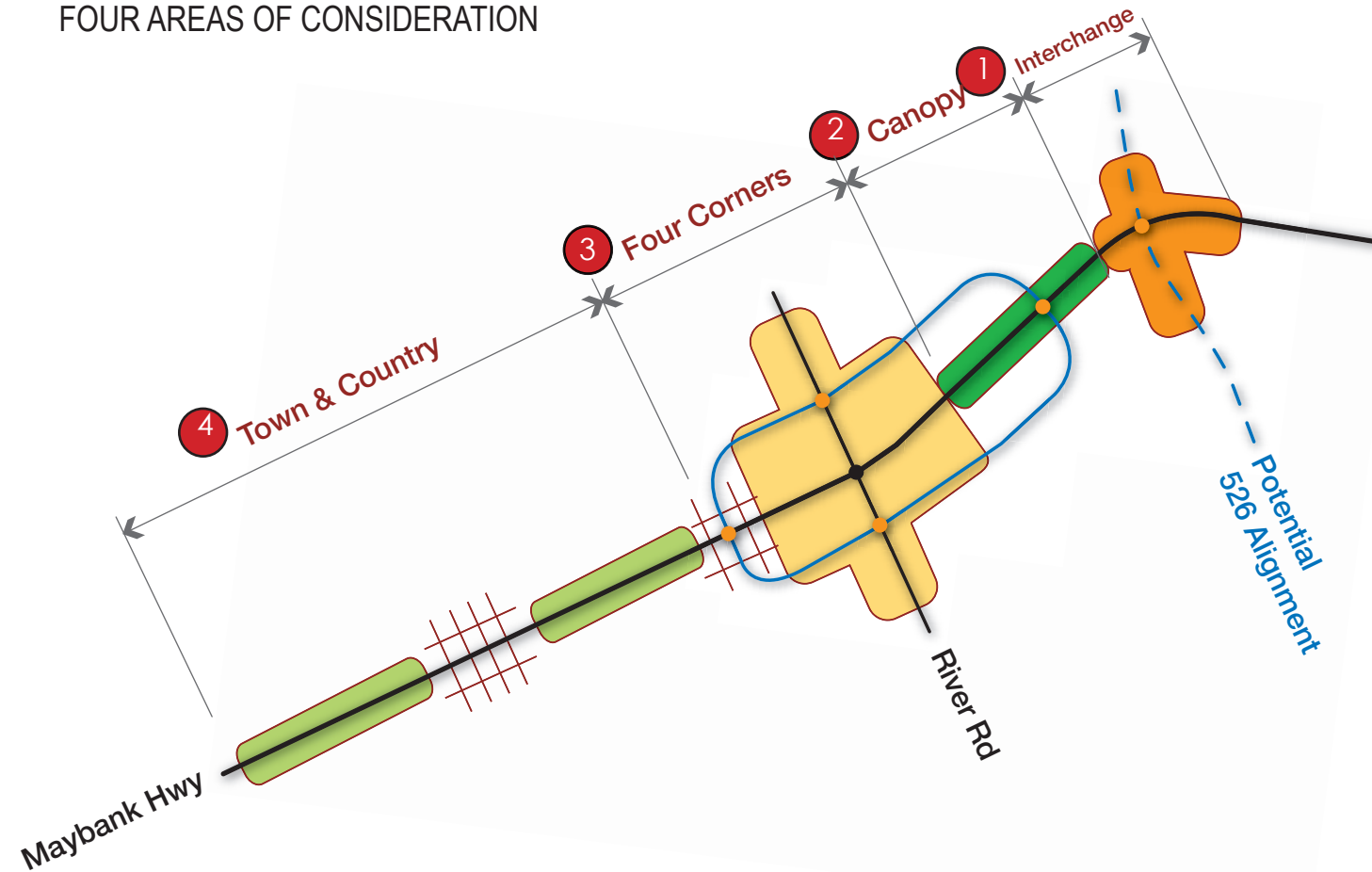


Illustration 19

The purpose of this planning exercise is to craft the best future possible for Johns Island, whether or not I-526 is completed.

Recommendations

With the cooperation of a nationally recognized traffic-engineering consultant, several specific network alternatives were studied and are being recommended along with several recommendations relating to road design configurations that respond favorably to the existing character of the island.

The Maybank Highway Corridor, stretching from the eastern entry point at the terminus of the Johns Island connector to the intersection of Main, with Bohicket and Maybank at the western end, should be given special design attention. As the main transportation corridor through the island, it carries

a large traffic volume and acts as the gateway for motorists coming from the east. In response to these factors, along with considerations related to function, aesthetics and environmental concerns, there are four primary aspects of the corridor to be addressed. The graphic on this page identifies these aspects in a diagrammatic way and includes the I-526 Interchange, the gateway “canopy” condition along Maybank Highway, the type and form of the “Four Corners” intersection of Maybank and River Road, and the configuration of the remainder of Maybank Highway in a “Town & Country” geometry.

- 1 **I-526 Interchange.** At the eastern end where Maybank and I-526 will connect, the selection of an appropriate highway interchange design is needed. This interchange design should minimize adverse environmental impacts and also be visually



Illustration 20: Island Entry Proposal-East

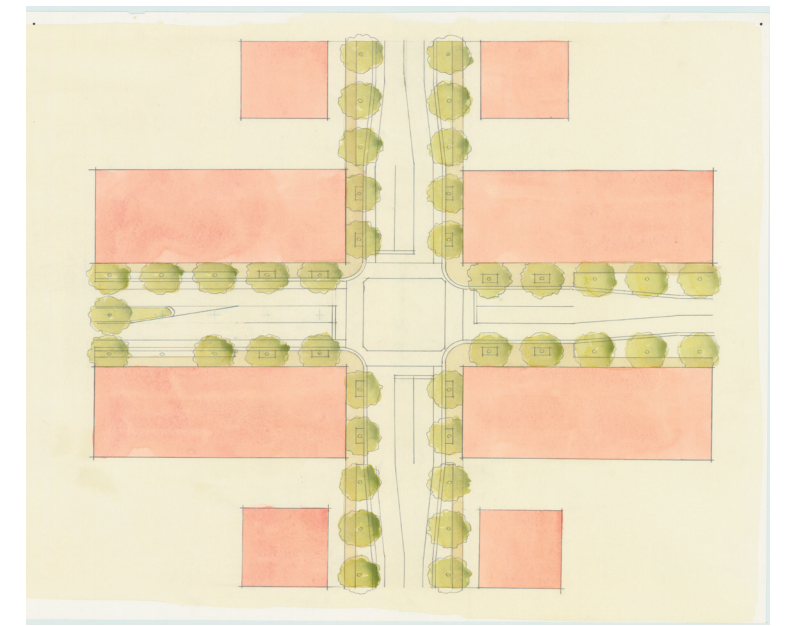


Illustration 21: Four Corners Approach

pleasing.

- 2 **Preserve the Tree Canopy on Maybank By Building A Parallel Roadway at Least 100 feet South of the Existing Maybank Highway, Then Constructing Two Additional Entry Roads from Fenwick Allee Westward.**

The mature tree canopy along Maybank Highway should be preserved. One very important and specific proposal that can do this involves the construction of two new routes, one north and one south that begin at the intersection of Maybank Highway and Fenwick Hall Allee at a signalized intersection and proceed to points of intersection with River Road. This proposal is shown here. It is recognized that the placement of these roads must be done with consideration and evaluation of all the existing environmental conditions, historical assets and existing development in this area. It is believed that any widening of Maybank Highway along this gateway or entry portion of the road can be avoided with the introduction of these alternative routes to and from River Road. This proposal is also part of a larger initiative to develop a complete network of roads and streets throughout the study area and it is described in greater detail later in this report.

- 3 **Build the Maybank/River Road Intersection in a Traditional Four Corners Approach.**

With the successful introduction of two additional entry roads at Fenwick Hall Allee it will be possible to configure the intersection of Maybank and River Roads as a conventional “town-like” signalized intersection. This intersection is located at what is proposed to be the center of a Gathering Place neighborhood. As such, it will be enclosed by buildings placed at or close to the Right-of-Way on all four corners. The intersection will be designed to be pedestrian friendly, it will feature dedicated left turn lanes, and will be tree lined.

- 4 **Configure Maybank Highway as a Sequence of Town and Country Sections.**

In conjunction with several planning and design initiatives described in a later portion of this report, it is proposed that the approximately three mile length of Maybank Highway between River Road and Main Road be reconfigured into “Town & Country” sections. Briefly, it is proposed that several compact, town-like or gathering place nodes be developed along Maybank Highway. Where these nodes exist, it is proposed that Maybank Highway assume a geometry appropriate for passage through the town section. At the



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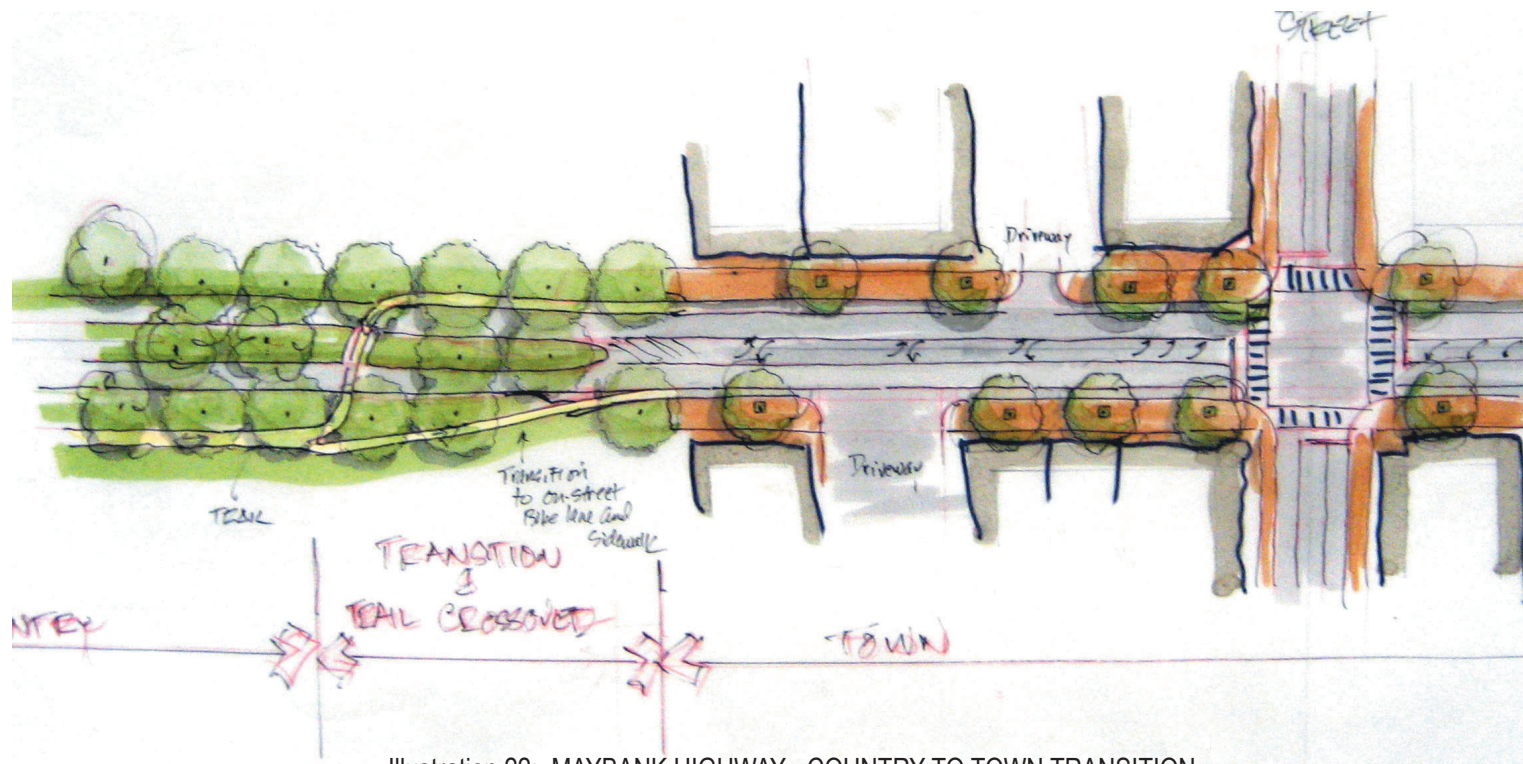


Illustration 22: MAYBANK HIGHWAY - COUNTRY TO TOWN TRANSITION

edges of these gathering places, the road would take on a configuration appropriate for a country road designed to reflect Johns Island character. This includes tree preservation and planting of new trees within medians and alongside the road, the use of typical Johns Island drainage swales, and the introduction of an alternative transportation mode pathway (bicycle, pedestrian, other).

The graphics on this page illustrate recommended road cross-sections and plans for both the town and country portions of Maybank Highway. There is also a diagram that shows how the road transitions from a divided country configuration to a more urban geometry as the road passes through a gathering place.

Road and Street Network Enhancement

As an alternative to conventional road widening, it is recommended that adding parallel roads, where possible and making additional cross-connections between the primary roads increase the capacity of the road system. In some cases, additional cross-connections are already planned by way of design requirements for new neighborhoods. In other cases,

it will be necessary to study and evaluate additional cross-connection and parallel alternatives.

Current traffic models demonstrate that distribution of traffic through a network increases capacity and improves intersection performance without the need for road widening. This alternative is highly desirable as it, therefore, allows the preservation of the existing road canopies. In addition, where roads are currently flanked by established tree stands the canopy effect will be extended, thereby enhancing this highly valuable environmental and aesthetic condition for future generations.

A proposal showing future cross-connectivity is shown in the preceding Illustrations. Existing streets are shown to the left. The streets serving new neighborhoods (at various levels of completion) are shown as blue solid lines in the center illustration. Possible future connections are shown as green lines in the illustration on the right. This system represents an interconnected network of roads and streets that will provide

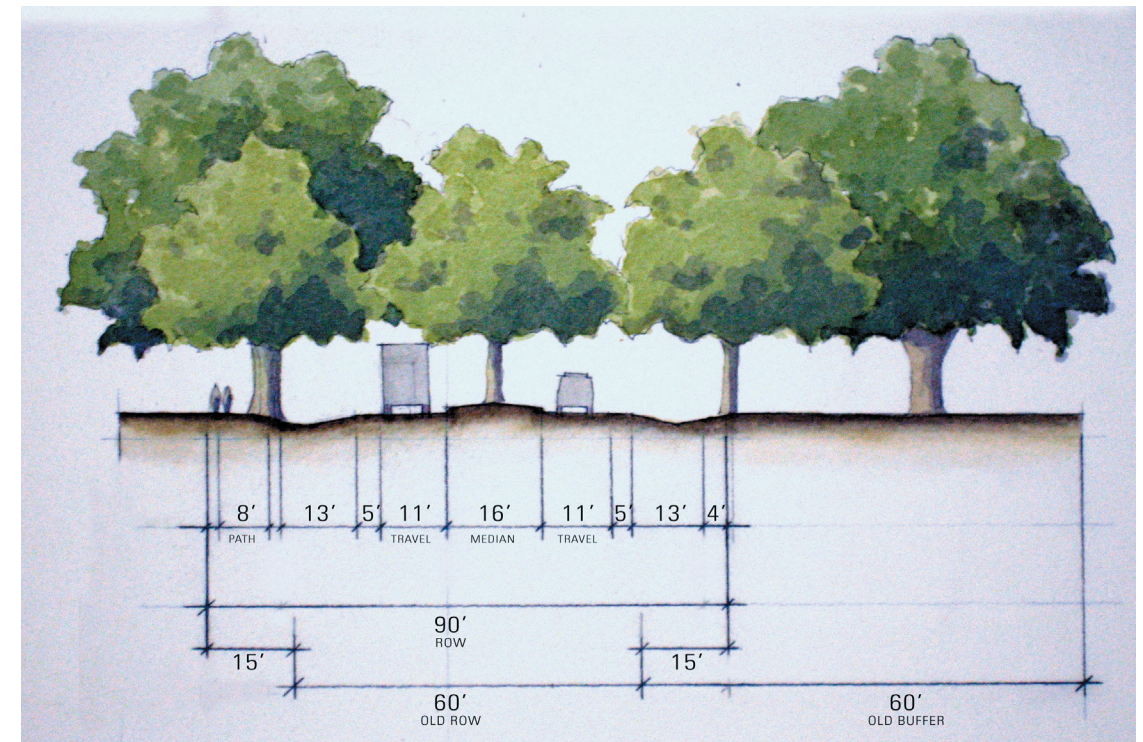


Illustration 23: MAYBANK HIGHWAY - COUNTRY SECTION

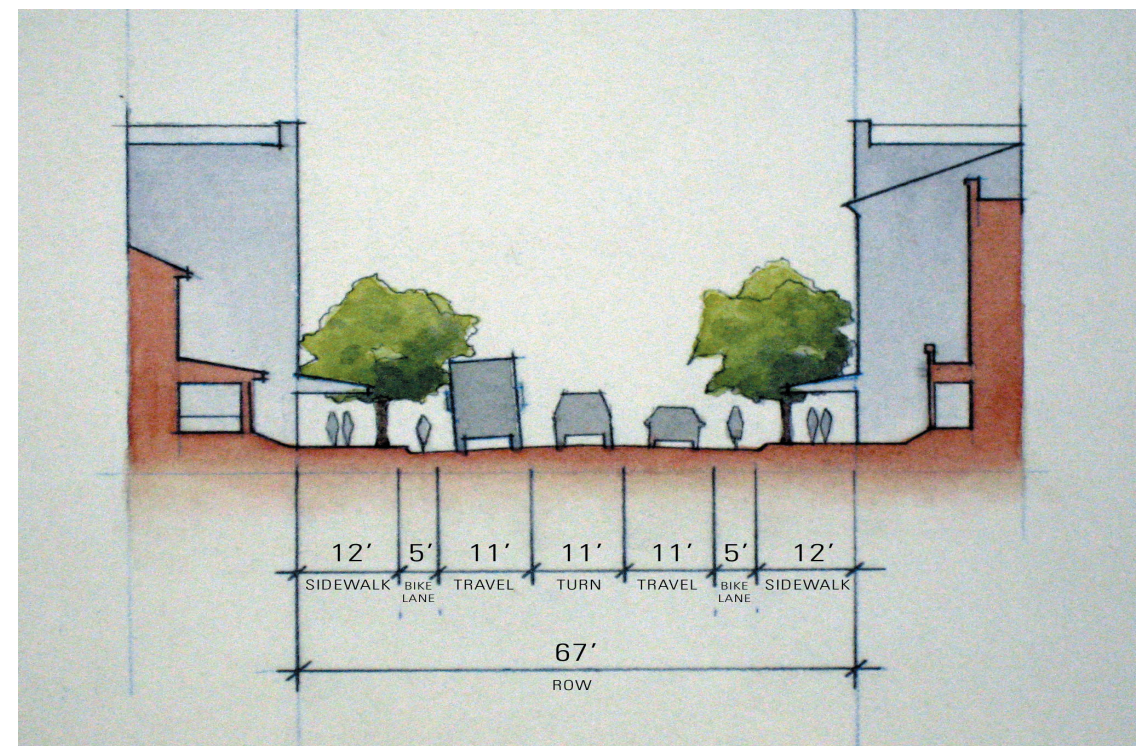


Illustration 24: MAYBANK HIGHWAY - TOWN SECTION

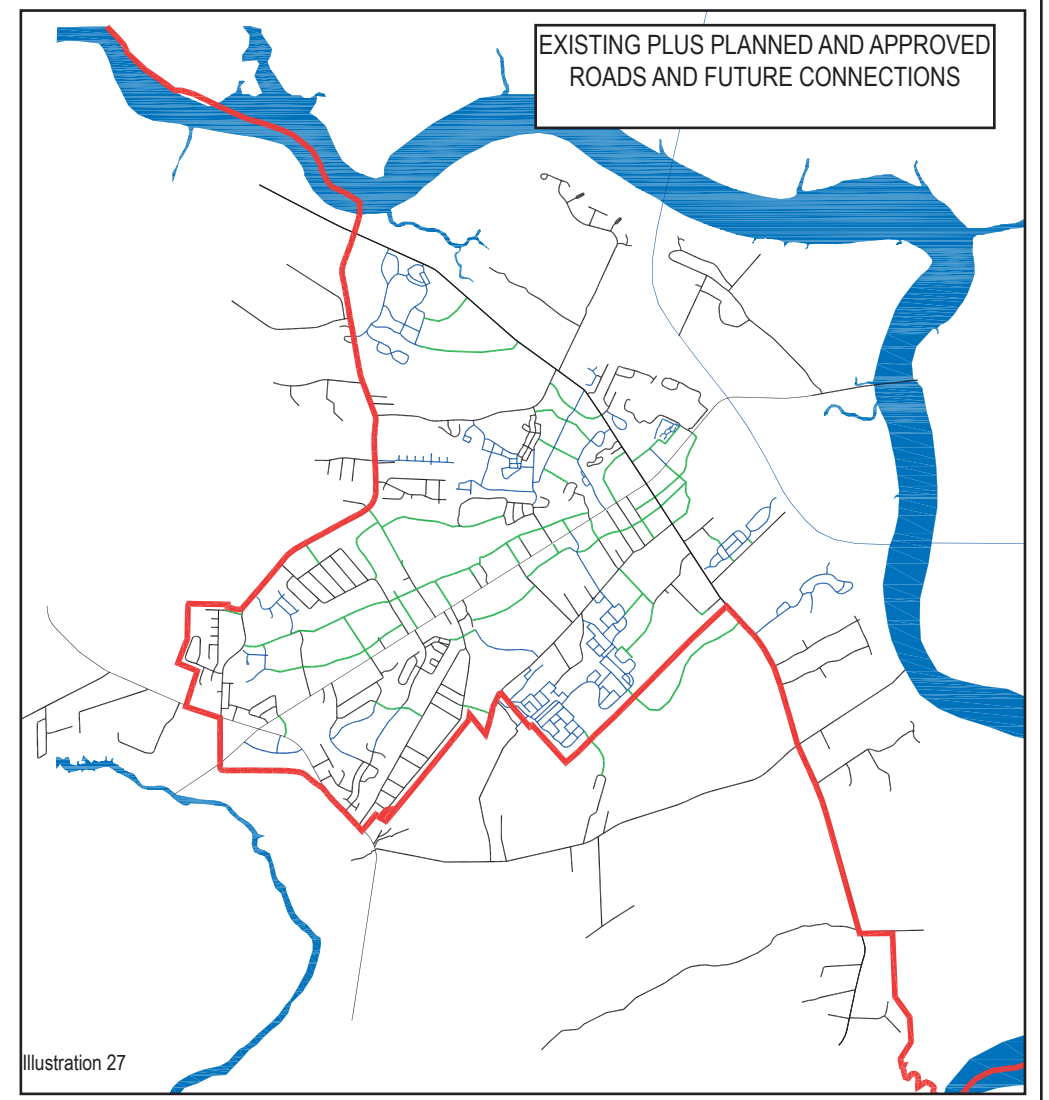
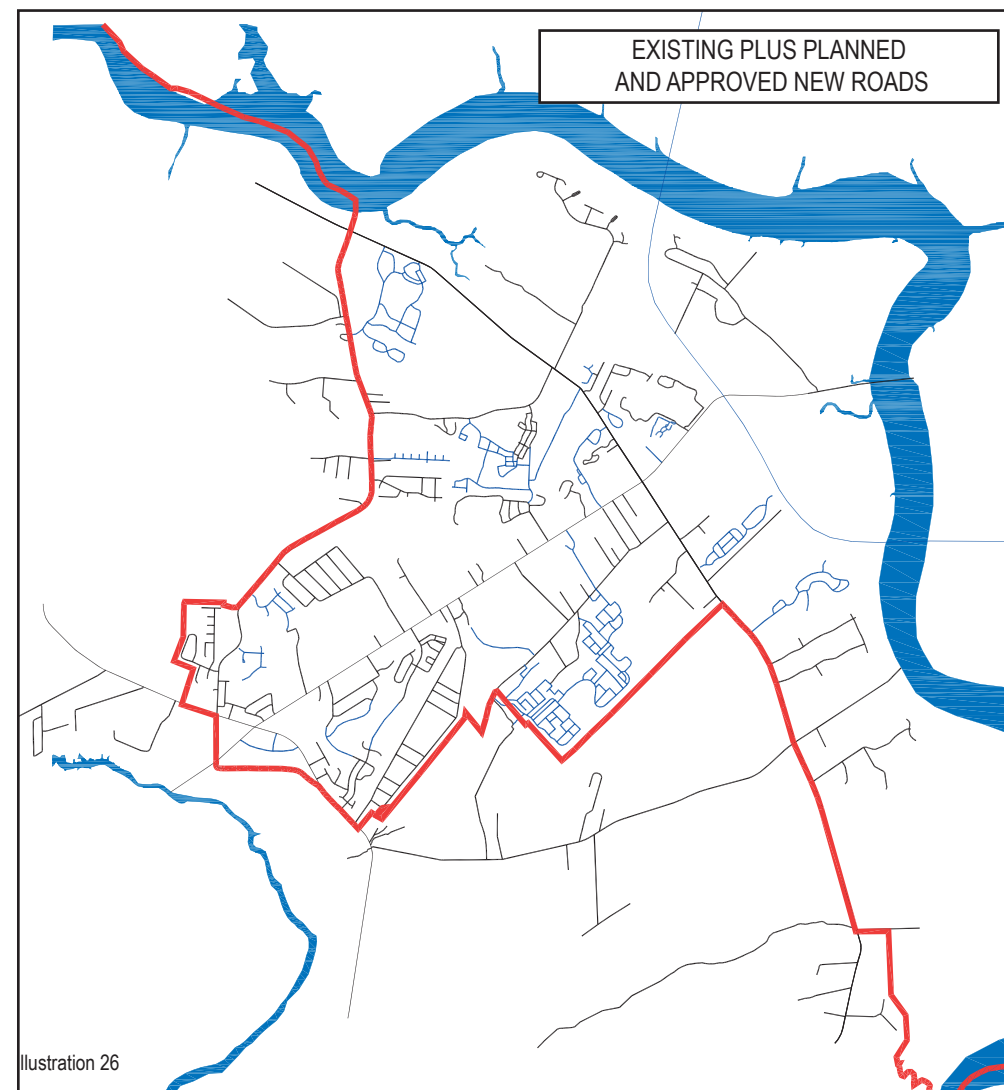
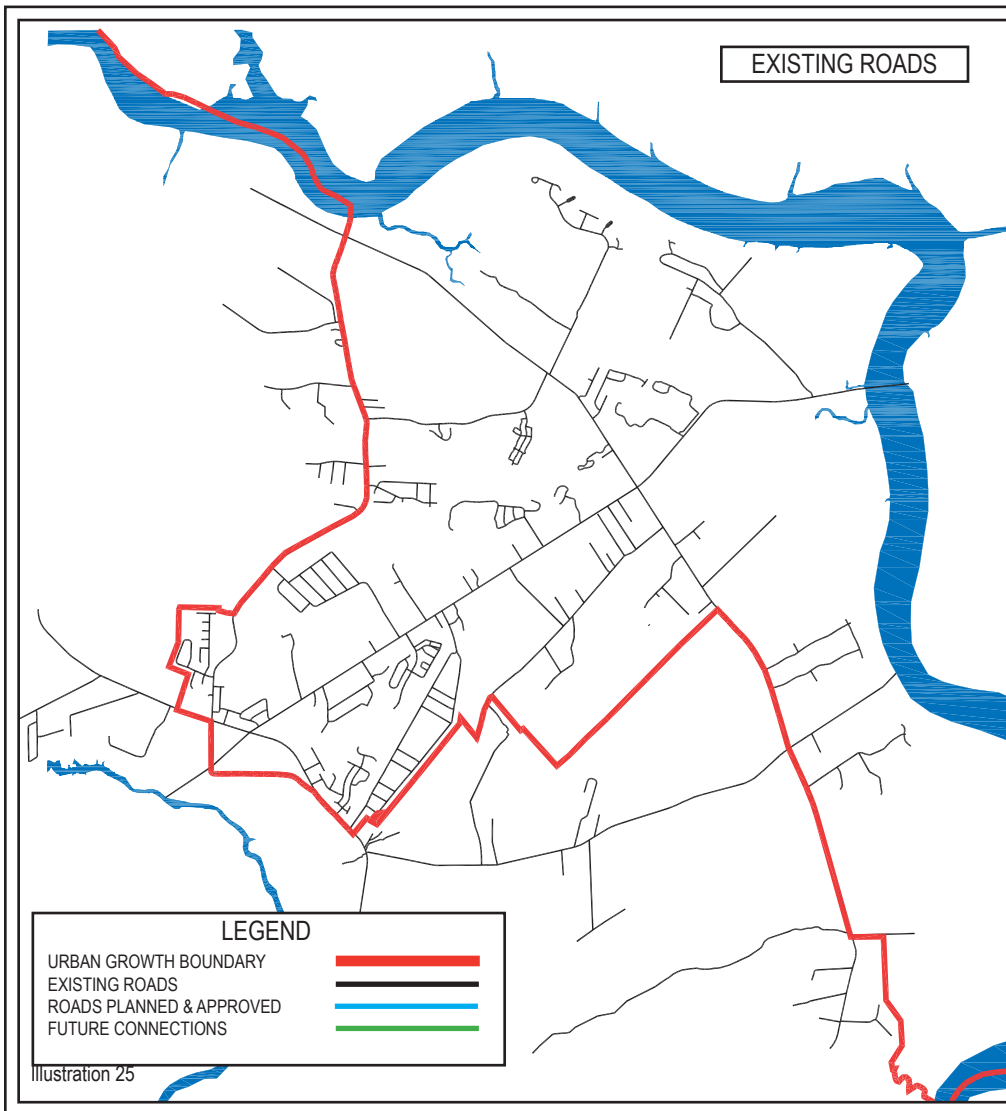


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multiple alternatives for people moving internally and across the island.

As a practice the City of Charleston has been requiring that the streets in new neighborhoods connect to neighboring properties and existing streets. To further this initiative a new ordinance has been approved that requires these connections across both residential and commercial properties. It should be noted that connectivity must reflect true connectivity principles via the design of the roadways versus “cut-through traffic” design that is employed in conventional roadway standards. “The ruling principle is that as long as the road is designed with low-speed geometries, traffic generally treats the neighborhood the way that the neighborhood treats it. Friendly house fronts tell drivers to slow down, while blank walls and house backs tell them to speed up.” (Duany, Plater-Zyberk, Speck: Suburban Nation: The Rise of Sprawl and Decline of the American Dream) The City of Charleston roadway standards should be fully examined to reflect the desired low-speed geometries as many of the current standards do not reflect this principle.

Public Transit Options (Bus first, Light Rail Vehicle future). As a result of the construction of compact walk-able gathering places, it will be possible to support public transit along Maybank Highway. Compact neighborhoods allow transit users to have easy walking access to transit stops. The use of transit removes vehicles from roads, and therefore, improves traffic conditions while providing convenience to riders.

Ensure an island-wide transportation plan is established to guide new developments and designs. (Ensure that the City Department of Traffic and Transportation and South Carolina Department of Transportation’s plans are defined before approving new developments.) The City should adopt a master roadway/thoroughfare plan as part of the form-based code adoption be developed that identifies potential interconnected streets and bike/pedestrian paths between developments, prior to plan approval. The form-based code shall also include the provision of mass transit features in all proposed settlements, especially within the T-

4, T-5 zones. Finally, the City should explore the possibility of enacting concurrency management standards that would require infrastructure (roads, schools, water and sewer) to be in place before or concurrent to the development.

Build a Network of Bike and Pedestrian Paths throughout the Entire Study Area.

A complete, safe and comfortable bicycle and pedestrian network should be designed for the area within the Urban Growth Boundary. This system would include streets and roads, as appropriate, where the street geometry and configuration limit motor vehicle speed. It would also include separated and dedicated walks, paths and trails as suitable for non-motor vehicle travel such as through parks or mid-block in compact neighborhood areas. The recommended form-based code shall promote and require appropriately scaled bicycle and pedestrian facilities as part of the master roadway/thoroughfare plan.



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